

# news

Up to the minute news from the world of amateur radio, personal computing and emerging electronics. While no guarantee is made, information is from sources we believe to be reliable. May be reproduced providing credit is given to The W5YI Report.

## BI-MONTHLY REPORT

Fred Maia, W5YI, Editor, P.O. Box 10101, Dallas, TX 75207

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## McNamara Named FCC Special Services Chief

As reported in our last issue, the new Chief of the FCC's Special Services Division is **Robert H. McNamara** - previously the Chief of the Aviation and Marine Branch. Bob has been with the FCC since 1975 when he was appointed as a staff attorney. He served as Deputy Branch Chief before heading up the Aviation/Marine Branch. We chatted with him this past week.

Bob was very surprised when the unexpected opportunity presented itself for him to become the Division Chief. "I was shocked when I heard Ray was leaving the FCC. It was just an offer he couldn't refuse."

McNamara will now oversee the three branches that fall under the Special Services Division. In addition to the Aviation and Marine branch, Bob will also supervise the International staff and Personal Radio Branches. Amateur Radio, of course, is one of the Personal Radio Services. The International section prepares U.S. spectrum management positions for international radio conferences.

Bob said he is not an amateur radio operator, but said he "might have aspirations" in the future. He is a native of Avon, Massachusetts - about 20 miles south of Boston.

Bob has been in the Private Radio Bureau for the last twelve years and came to

the FCC upon graduation from law school at Suffolk and Tufts University. Prior to that he was a jet fighter pilot and a graduate of the Navy's "top gun" fighter weapons program in San Diego.

McNamara said the we will see very few changes in the way Amateur Radio matters are handled in the future. "Both Ray (Kowalski - previous chief) and Johnny (Johnston (W3BE, Personal Radio Branch Chief) have done outstanding jobs," Bob said. "Possibly we can fine tune the management function ...faster response time, and so forth."

"I am proud to be associated with the Amateur Service," he said. "I have always thought the amateurs do a tremendous job. As you all know, everyone out there always wants to take your frequencies from you. It is a constant battle."

At this point, Bob said he had no comments on various pending Amateur Radio issues. Having just started in the Division, he said he did not yet know enough about the substance of the various items being worked on to discuss them yet. "I have started looking at them ...but give me a little time before I stick my foot in my mouth."

Bob, 42, his wife, and two sons (aged 12 and 9) reside in Fairfax, Virginia.



● The BEARS VEC operation (Kirkland, WA) is going out of business effective: May 1, 1988. The Boeing Employees Amateur Radio Society coordinated ham tests above the Novice level in VEC Region 7. Hershel F. Eppenstein/N7CAL, VEC manager, is trying to get his teams affiliated with other VEC programs.

Month:	<u>1985</u>	<u>1986</u>	<u>1987</u>
January	1343	1477	2248
February	1242	1805	1889
March	2001	1606	795
April	2043	2767	2950*
May	2174	958	6797*
June	1186	2028	1850
July	1431	2806	870
August	1297	1377	918
September	751	1504	1917
October	1356	874	882
November	910	1404	1131
December	<u>2385</u>	<u>1826</u>	<u>2582</u>
Totals:	18,119	20,432	24,829

WOULD YOU LIKE TO BECOME A VOLUNTEER EXAMINER?



● ICOM has a new IC-781 10-160 meter HF base station transceiver with every feature imaginable - including a 5" CRT screen display! You can even receive two frequencies simultaneously on the same band!



A major amateur radio story is shaping up for the months of March/April and May when a team of six Soviet and four Canadian skiers will attempt to ski across the North Pole (actually the frozen Arctic Ocean) from the top of the Soviet Union to the top of Canada - a distance of about 1,100 miles. It will take them 90 to 100 days. Amateur radio will provide the major means of communication.

The following press release (dated January 11, 1988) is from The Canadian Radio Relay League, Inc.:

## USSR/CANADA SKITREK EXPEDITION....

"Planning for the amateur radio communications network in support of this expedition is now in its final stages. The skiers will leave Cape Artichesky on Severnaya Zemlya about March 1st on their 1750 kilometre journey over the North Pole to Columbia on Ellesmere Island.

For more than three months of this hazardous journey across the polar ice, daily radio communication will be maintained between the expedition and the teams of Soviet and Canadian amateur radio operators at base stations in Severnaya Zemlya, Resolute Bay on Cornwallis Island (Northwest Territories VE8UA) as well as Moscow, Dikson, Ottawa and Toronto.

The amateur equipment, which was the first choice of the Canadian operating group, is being provided by ICOM and includes HF and VHF base stations and amplifiers, as well as handie-talkies for 2 metres and communication with the supply drop aircraft. Six drops are scheduled.

Using the facilities of SARSAT/COSPAS, the search and rescue satellites, as well as the amateur radio satellite called UoSAT 11, with its 'talking computer' on board, it will be possible for the trekkers to hear their location read to them over the 2 metre hand held radio, as UoSAT passes over them about every 200 minutes."

USSR Amateur Radio Communications:  
Expedition Chief: Dmitry Shparo, UA3AJH

## Chief Radio Operator: (Located in Moscow)

Leonid Labutin, UA3CR  
Wasily Zaushitein, RW3DR  
Peter Strezev, UA3AOC  
Alexandr Tenyakshev, UW3GZ

## USSR Base Station:

EK0KP, Sredny Is., Severnaya Zemlya

Canada has assembled a team of experienced amateur radio operators who will staff the base station and other relay stations all across the country. The Canadian Project Coordinator is Tom Atkins/VE3CDX of Toronto. Atkins leaves for a briefing in Moscow on January 27th. More details concerning the expedition will become known once Atkins returns from the Soviet Union on February 12th.

It is probable that a special Transpolar Skitrek Expedition call sign will be authorized by the government of Canada to the main Canadian base station on Cornwallis Island, NWT.

Special limited third party traffic and reciprocal licensing privileges have already been established between Canada and the USSR - the first ever between an iron curtain country and the free world - to facilitate the use of amateur radio communications during the expedition.

The Canadian skiers were "specially licensed" as amateur radio operators with their initials as call sign suffixes. Lory Dexter becomes VE8LD and Richard Weber, VE8RW. No one is talking about it, but Canada bent some rules to license the Canadian skiers. It is questionable as to whether they know code.

Around the world, hundreds of amateur radio operators will be listening for the low power signals from the expedition, so that their every step will be followed as they make this journey across the frozen expanses of the Arctic Ocean.

Educators are planning to use the UoSAT Digitalker for students to plot the journey across the Pole, as the signals from the amateur satellite will be audible on general purpose scanning receivers tuned to 145.825 MHz.



## AMATEUR RADIO CALL SIGNS

...issued as of the first of January, 1988.

Radio District:	Gp."A" Extra	Gp."B" Adv. Tech/Gen.	Gp."C" Novice	Gp."D"
0	WE0B	KE0SI	N0ITS	KB0BQW
1	NO1H	KC1HN	N1FKK	KA1RKO
2	WC2Y	KE2DV	N2HUN	KB2EWM
3	NM3W	KD3FY	N3FYD	KA3SOL
4 (*)	AB4FO	KK4VV	N4RVG	KC4CXJ
5 (*)	AA5EE	KG5GP	N5LXI	KB5FCD
6 (*)	AA6GH	KJ6CJ	N6RDW	KB6VKQ
7	WI7Y	KF7GC	N7KGT	KB7DQT
8	NZ8T	KE8PI	N8JAS	KB8DSH
9	NW9H	KE9HU	N9HCM	KA9ZYO
N.Mariana I.	AH0E	AH0AD	KH0AJ	WH0AAH
Guam	KH2G	AH2BV	KH2DE	WH2ALK
Johnston Is.	AH3A	AH3AC	KH3AB	WH3AAC
Midway Is.		AH4AA	KH4AD	WH4AAF
Palmyra/Jarvis	AH5A			
Hawaii	(**)	AH6IT	NH6OD	WH6BWB
Kure Island			KH7AA	
Amer. Samoa	AH8C	AH8AD	KH8AF	WH8AAW
Wake Wilkes Peale	AH9AC	KH9AD	WH9AAH	
Alaska	(**)	AL7JO	NL7LW	WL7BQC
Virgin Is.	KP2T	KP2BK	NP2CI	WP2AFU
Puerto Rico	(**)	KP4OO	WP4NB	WP4HSU

**NOTES:** \* = All 2-by-1 format call signs have been assigned in the 4th, 5th and 6th radio districts. 2-by-2 format call signs from the AA-AL prefix block now being assigned to Extra Class amateurs.

\*\* = All Group "A" (2-by-1) format call signs have been assigned in Hawaii, Alaska and Puerto Rico. Group "B" (2-by-2) format call signs now being assigned Extra Class.

[We have finally received the August-1987 VE stats and we are listing them below.]

## AUGUST VE PROGRAM STATISTICS....

	August	1985	1986	1987
No. VEC's:		*65	*75	*59
No Testing Sessions:		280	288	384
	1985	1986	1987	
ARRL:	53.6%	39.6%	41.1%	
W5YI:	13.6%	25.0%	31.5%	
DeVRY:	6.4%	12.2%	7.0%	
CAVEC:	5.4%	6.9%	6.0%	
Others:	21.0%	16.3%	14.4%	
Year-to-Date Sessions:	2109	2483	2922	

(Continued:) August 1985 1986 1987  
No. Elements Admin.: 4894 4555 6815

	1985	1986	1987
ARRL:	49.4%	44.6%	51.3%
W5YI:	9.9%	15.6%	25.4%
CAVEC:	7.8%	9.8%	7.0%
DeVRY:	4.1%	11.4%	3.8%
Others:	28.8%	18.6%	12.5%
Year-to-Date Elements:	44288	43563	55763

No. Applicants Tested: 3299 3110 4081

	1985	1986	1987
ARRL:	57.1%	44.0%	51.4%
W5YI:	10.2%	16.6%	25.5%
CAVEC:	7.4%	9.4%	6.6%
DeVRY:	4.5%	11.5%	3.7%
Others:	20.8%	17.3%	12.8%
Year-to-Date Applic:	21128	29915	34885

Pass/Upgrade Rate, All: 61.0% 57.2% 60.3%  
Pass/Upgrade Rate, W5YI: 64.4% 50.1% 55.6%  
Applicants per Session: 11.8 10.8 10.6  
Appl. per Session/W5YI: 9.2 9.3 8.4  
No. Elements Per Appl./All: 1.5 1.5 1.7  
No. Sessions Per VEC/All: 4.3 3.8 6.5

## NOVEMBER VE PROGRAM STATISTICS....

	November	1985	1986	1987
No. VEC's:		*77	*74	*59
No Testing Sessions:		286	268	356
	1985	1986	1987	
ARRL:	54.2%	49.3%	37.1%	
W5YI:	12.2%	21.6%	33.1%	
DeVRY:	6.6%	7.5%	8.4%	
CAVEC:	9.1%	7.5%	7.6%	
Others:	17.9%	14.1%	13.8%	
Year-to-Date Sessions:	2930	3416	3933	
No. Elements Admin.:	2240	4338	5416	

	1985	1986	1987
ARRL:	55.8%	50.1%	43.2%
W5YI:	9.9%	15.8%	28.2%
CAVEC:	8.3%	7.4%	8.7%
DeVRY:	5.2%	7.8%	6.7%
Others:	20.7%	18.9%	13.2%
Year-to-Date Elements:	57119	56893	72548
No. Applicants Tested:	2986	2541	3246

	1985	1986	1987
ARRL:	54.7%	48.4%	42.7%
W5YI:	10.4%	16.8%	28.3%
CAVEC:	7.9%	6.9%	8.2%
DeVRY:	5.1%	8.2%	6.6%
Others:	21.9%	19.7%	14.2%
Year-to-Date Applic:	37788	39036	44891



(Continued:) November	1985	1986	1987
Pass/Upgrade Rate, All:	60.9%	58.8%	61.2%
Pass/Upgrade Rate, W5YI:	65.9%	58.6%	58.4%
Applicants per Session:	10.1	9.5	9.1
Appl. per Session/W5YI:	8.6	6.2	7.5
No. Elements Per Appl./All:	1.5	1.5	1.7
No. Sessions Per VEC/All:	3.7	3.5	6.0

\* = The FCC considers ARRL, W5YI, and DeVry to be 13 VEC's each since VEC's are appointed on a regional basis. The 13 regions are: Call sign districts 1 through 0 plus: Alaska (11) and Carribean (12) and Pacific Insular areas.(13)

[Source: FCC, Washington, D.C. 20554]

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## DECEMBER AMATEUR LICENSING STATS

December	1985	1986	1987
First Time Amateurs:	2385	1861	2582
Novice Class Upgrades:	700	380	1208
Technician Upgrading:	262	133	421
General Class Upgrading:	345	173	394
Advanced Class Upgrading:	192	85	271
Total Amateurs Upgrading:	1899	771	2294
Total Dropped Fm Service:	1785	970	1020
Total Novices Dropped:	1124	542	452
Change/Ham Census/Month	+581	+861	+2085
Month End Census:	411580	421077	433389

Extra	Advan.	Gen'l	Tech.	Novice	TOTAL:
(Dec. 1985)					
38495	97959	117107	83679	78616	415856
9.2%	23.6%	28.2%	20.1%	18.9%	
(Dec. 1986)					
41082	97771	115715	85312	79882	419762
9.8%	23.3%	27.6%	20.3%	19.0%	
(Dec. 1987)					
43902	98610	114398	93466	83013	433389
10.1%	22.8%	26.4%	21.5%	19.2%	

Club/Military/RACES Sta.	2749	2605	2408
Total Active Stations:	418605	422367	435797
Percent Increase:	.9%	.9%	3.2%

## HAM APPLICATIONS PROCESSED (During Dec.)

1982:	1983:	1984:	1985:	1986:	1987:
11525	11189	8775	9135	7601	12686

[Source: FCC, Gettysburg, Pennsylvania.]

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**Personal Medical Telemetry** to your doctor? The FCC has just issued an experimental (KA2XTD) license to a firm that will test and demonstrate a 216-220 MHz device that will track persons undergoing medical care.

## W5YI-VEC PROGRAM - MONTHLY FIGURES

MONTH:	PASS:	FAIL:	TOTAL:	% PASS:	SESSIONS
JAN. 1985	122	88	210	58.1%	17
JAN. 1986	265	155	420	63.1%	45
JAN. 1987	280	217	497	56.3%	85
FEB. 1985	157	88	245	64.1%	22
FEB. 1986	287	161	448	64.1%	50
FEB. 1987	454	333	787	57.7%	95
MAR. 1985	169	101	270	62.6%	22
MAR. 1986	338	201	539	62.7%	53
MAR. 1987	709	555	1264	56.1%	139
APR. 1985	252	177	429	58.7%	37
APR. 1986	321	266	587	54.7%	59
APR. 1987	462	334	796	58.0%	86
MAY. 1985	330	157	487	67.8%	32
MAY. 1986	389	265	654	59.5%	50
MAY. 1987	777	531	1308	59.4%	108
JUN. 1985	194	129	323	61.9%	38
JUN. 1986	309	197	506	61.1%	63
JUN. 1987	441	321	762	57.9%	96
JUL. 1985	159	95	254	62.6%	28
JUL. 1986	218	186	404	54.1%	55
JUL. 1977	467	365	832	56.1%	98
AUG. 1985	244	135	379	64.4%	41
AUG. 1986	317	316	633	50.1%	68
AUG. 1987	534	426	960	55.6%	114
SEP. 1985	118	95	213	55.4%	32
SEP. 1986	298	234	532	55.8%	71
SEP. 1987	445	312	757	58.8%	100
OCT. 1985	179	87	266	67.3%	35
OCT. 1986	242	220	462	52.4%	64
OCT. 1987	506	382	888	57.0%	107
NOV. 1985	272	141	413	65.9%	48
NOV. 1986	251	177	428	58.6%	69
NOV. 1987	533	379	912	58.4%	121
DEC. 1985	433	295	728	59.5%	49
DEC. 1986	678	359	1037	65.4%	91
DEC. 1987	501	383	884	56.7%	119
(TOTALS:)					
1985:	2629	1588	4217	62.3%	401
1986:	3913	2737	6650	58.8%	656
1987	6109	4538	10647	57.4%	1268



● Sales and profits at Tandy/Radio Shack are booming! They reported a 34% increase in earnings for the year ended December 31.

● MFJ has a new \$249.95 "7-Mode Data Controller" that lets you work in the packet, ASCII, RTTY, CW, WEFAX, SSTV and memory keyer modes. All you need is a standard HF/VHF rig and any computer with a serial port and terminal program. (Tel: 1-800-647-1800)

● AMSAT advises that word from Europe indicates that launch of the Phase 3C amateur satellite could come as early as late April. Phase 3C testing has been completed in West Germany and will soon the satellite be shipped to Paris and on to the ESA launch site at Kourou, French Guiana. AMSAT needs authors to inform the general Amateur Radio community about Phase 3C and how to use the amateur satellite. AMSAT is compiling a press kit. Call: 301-589-6062 Monday-Friday if you are interested in helping out.

● In a surprise announcement, Tucson Area Packet Radio Corporation (TAPR) president Lyle Johnson, WA7GXD, has resigned from TAPR. He cites "professional and personal pressures." Lyle won Dayton's first Technical Achievement Award for his development work in amateur packet radio.

● AMSAT announces that its member dues will increase effective March 1st to \$29, \$36 for Canada/Mexico, \$42 other foreign.

● According to celebrated Washington Post columnist Jack Anderson, drug traffickers have gone "high-tech". They are using cellular telephones with scramblers, sophisticated paging and electronic mail systems, personal computers, electronic alarms, electronically encrypted messages, night vision equipment and remotely-piloted vessels. "Cost, regulation or legality are of no concern to the trafficker."

● The FCC extended the time for filing reply comments on their NPRM to improve the General Mobile Radio Service to January 29. Improvements proposed include limiting GMRS eligibility to individuals, eliminating the need to relicense a GMRS system when it changes channels, add additional channels in-

between existing channels, provide for transient use of repeaters, broaden station operator eligibility and create the concept of a small base station to enhance GMRS utility for the mobile-unit oriented personal user. Comments closed on November 30. GMRS is the old 8-pair Class "A" 460 MHz CB service.

● Readers from all over the country have been sending us local newspaper versions of the AP press release we mentioned in our last newsletter about the possible link between cancer and amateur radio. The headlines, added by the newspaper, usually imply that neighborhood ham radio transmissions increase cancer risk. Not good publicity at all!

● The Dayton Amateur Radio Association is now accepting applications for its 1988 Scholarship Program. Any licensed amateur graduating from high school in 1988 is eligible to apply. Awards will be based on a combination of financial need and academic accomplishment with consideration given for service to Amateur Radio and community involvement. Those selected will receive \$1,000 toward tuition at a school of their choice. There are no restrictions on the student's course of study. Applications must be postmarked no later than May 15, 1988. Winners will be announced on/about June 1st. Information and application forms available from: DARA Scholarship Committee, 317 Ernest Avenue, Dayton, Ohio 45405

● The R. L. Drake Company of Miamisburg, Ohio, has been awarded special recognition for its "Outstanding Service Department Performance" by the Electronics Technicians Association. Drake, an amateur radio equipment manufacturer for forty years, entered the earth station receiver business in 1981.

● According to the 1988 FCC Semiannual Regulatory Agenda, the Office of Science and Technology is scheduled to release a Report & Order on the reallocation of 220-222 MHz to narrow-band Land Mobile use on March 31, 1988. While they could change their mind, of course, the Semiannual Agenda specifically indicates a R&O will be issued. A Report & Order is the rulemaking vehicle the FCC uses when it adopts a proposal!

1/2 in. Morse code key, Oscillator and Battery \$9.95 + \$1.50 shipping.  
New Illustrated Morse Code Key, Morse code key, SAME DAY SHIPPING!  
Dallas, Texas (520) \$10.00 + \$2.00 post for clarification of the club  
everything necessary to obtain a ham ticket without  
any preparation to get the club



● Sony, originator of the video cassette recorder with its 1975 introduction of the Betamax VCR system, is apparently headed in a new direction. Recognizing that most of the video software used in this country is VHS format, Sony will be introducing VHS cassette recorders for the first time this year. They say they are not abandoning the Beta format.

● Broadcasting to supermarket shoppers is a novel new use for unused FM radio station subcarriers. Several FM stations are apparently renting this capacity to other broadcast firms who charge advertisers to promote their products directly to in-store shoppers who think they are listening to regular FM radio stations.

● NEC Home Electronics introduced a low cost data-communications networking system at the recently concluded Las Vegas Consumer Electronic Show that uses existing standard AC wiring as the transmission medium. The Spectrum AC System can also be used to control and link household appliances. By using "spread spectrum" technology, existing interference - usually concentrated on a single frequency - is eliminated.

● A U.S. Court of Appeals in New Orleans has ruled on a case brought by a mobile telephone user who sued a ham operator who overheard a cellular conversation and, believing that criminal activities were discussed, taped the conversation and gave the tape to the FBI. Contrary to the privacy statutes, the judge said it is unreasonable to expect privacy on a car phone conversation that can be picked up by a scanner. (Reported by McGraw-Hill World News.)

● StarSignal, Inc. of San Jose, California, has a new full-color, still-frame video phone that uses an IBM PC. The new PC Image Phone can digitize and store color video pictures for later transmission (via a modem) over the phone lines. A video printer option is available. (Cost: \$12,995)

● The FCC and broadcasters are at odds at what constitutes indecency and when it can be aired. Broadcasters want specific guidelines. The FCC set midnight to 6:00 a.m. as the "blue window". The NAB, stating the

ruling was "constitutionally suspect" wanted the safe harbor to begin at 10:00 p.m. when the kiddies should be in bed. This was denied by the Commission when they recently ruled on several Petitions for Reconsideration. Indecency, according to the the FCC, relates to offensive sexual or excretory words. Obscenity appeals to the prurient interest. At least one Kansas City independent television station reportedly aired a skin flick after the ruling. The FCC has notified the station that they face revocation of their broadcast license. Meanwhile, the National Association of Broadcasters has voted to challenge the constitutionality of FCC's indecency rules in the Courts. Strangely, the indecency rules seem to apply to over-the-air (broadcast), but not wireline (cable) delivered programming.

● A \$299 hand-held optical "Handy-Scanner-1000" is now available that allows desktop publishers to scan photographs and line art. The device delivers a 3½" wide image to such desktop publishing programs as Ventura and Pagemaker. A software enhancement due out later this year will allow the scanner to "read" printed text.

● Although temporarily delayed, the FCC is holding firm on their plan to apply interstate carrier access charges to on-line data bases, electronic mail, and other over-the-phone information services. The FCC decided last July to start applying the access charges on January 1, 1988. Congress got interested and the implementation date was postponed. The Commission has received a record 20,000 protests from users of various information services (including CompuServe and The Source) arguing that the FCC plan (Docket 87-215) could stifle the emerging enhanced services industry. The FCC contends it wants to stop the unfair subsidy and that data-base suppliers are the same as long distance companies and therefore should pay the same fees to use local telephone networks. Expect \$5 per hour increases to access phone delivered information services if the FCC follows through.

● Automobiles now have automatic tire air pressure sensors and inflation options. Computerized tire-pressure controllers developed by a Santa Clara (CA) firm, displays

Quantity  
10 or more \$2.00 plus postage  
5-9 \$2.50 plus postage  
1 Ea. \$4.00 plus postage  
Test Manual: Novice Tech. or Gen.

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Every manual contains every word-for-word question!

W5YI-VEC  
P.O. Box #1011-N  
Dallas, Texas 75207



February 1, 1988

pressure in each tire on the dashboard and allows manual or automatic adjustment to correct level without getting out of the car.

● AT&T has sold Viacom International's "Viewer's Choice" its automatic number identification (ANI) system which allows TV viewers to order PPV (pay-per-view) video programming automatically without operator assistance. "Viewer's Choice" will charge programmers 25¢ every time a show is ordered.

## THE MAGIC OF FIBER OPTIC TECHNOLOGY

Fiber optics is a buzz word that the phone companies are using more and more to impress customers ...but do you really know what it is, how it works ...and why it is better? Fiber optic technology replaces electricity with light and wires with hair-like strands of glass. The data (telephone conversations, computer ones-and-zeros, facsimile, video ...whatever) is converted into light waves with varying degrees of intensity. A simple LED (light emitting diode) can do it.

The light magically follows the strand by repeatedly bouncing off its glassy walls. A photo-detector at the receiving end transforms the light waves back into electrical energy. By far, "fiber's" biggest advantage is its ability to carry several different light signals at the same time. Although many signals are fed into the same fiber strand, each remains separate and distinct ...even after travelling many miles. On the other hand, electrical signals have a tendency to interact after a short distance through wire.

A single optical fiber strand no thicker than a human hair can carry hundreds of different signals - or phone calls. It takes a pair of copper wires for standard telephone service - two pair for two lines. Glass strands need not be insulated from one another in a cable and light waves aren't affected by the resistance that wire offers to electricity. Fiber optic technology is also more private since glass fibers can't leak radio waves that can be intercepted. It will be years before residential homes are optically connected, but once they are, cable-TV, burglar alarms, telephones, data networks ...and more can all simultaneously share the same glass strand.

## Technology Report, Interactive Television

### "TALKING" TO YOUR TV VIA RADIO... TV ANSWER SEEKS AMATEUR SPECTRUM

We have received a copy of the Petition for Rulemaking filed by TV Answer of McLean, Virginia, last month. TV Answer, Inc. has requested permission from the FCC to increase its Washington, DC area test from 1,000 to 6,000 homes. The increase will broaden the scope of TV Answer's testing and demonstration program that has been in progress since June 1987. The firm is less than a year old!

The petition also asks that the FCC expand its single (218.25 MHz) experimental frequency to a permanent 500-kHz spectrum slice from the Maritime (216-220 MHz) or Amateur Radio Service (220-222 MHz) band. The new band would be used by cable operators, broadcasters, ITFS (instructional) and MMDS (multipoint systems - so-called 'over-the-air cable') licensees.

The TV Answer System is the first interactive television viewer response device which requires no telephone connections, no satellite uplink and no two-way cable. At present, TV Answer returns its "replies" via a 218.25 MHz broadcast radio transmission from a small, self-contained remote control unit in a viewer's home.

Only viewers equipped with the TV Answer System device will have the ability to see the question and respond. The questions and answer options all appear at the bottom of the television screen, much like captions.

The United States Patent Office granted TV Answer a patent for its interactive system last year. The technology alone, some four years in developing, has cost nearly \$10 million.

The system, developed by TV Answer's president, Fernando Morales, treasurer Oscar Morales and secretary, Jorge Ortiz, is compatible with all one-way addressable systems and scrambling methods. Mass production of the under \$100 unit is scheduled for later on this year "by a large manufacturer."



The gadget, which enables two-way communications with a million television viewers a minute, even has the ability to identify their specific responses. It has the potential to revolutionize American life as we know it. No longer would we wonder at what people feel, want - or vote.

## HOW DOES "TV ANSWER" WORK?

The viewer simply aims an inexpensive (\$100 or less) Buck Rogers pistol-like joystick contraption at their television set to answer a question or to order something. You press the "enter/order" button after you have accessed the "option/up - option/down" features.

A 25-50 watt RF "TV Ansrbox" sitting on top of the viewer's TV is armed with a short 220-MHz antenna to transmit your response - a 10 microsecond RF "NØN" 400-kHz bandwidth burst. The power level parameters of Answer Units can be preset at varying strengths depending on the geographic considerations at the viewer's home.

Back at the TV or cable station, a "video inserter" transmits the question to be answered and a microprocessor-based "TV Ask" communications receiver detects the return data pulse streams which are routed to an inexpensive "off-the-shelf" IBM personal computer for decoding at 48K baud through the RS-232C serial port.

While the TV Ask/Answer electronics is sophisticated, operation by both the public and video firms alike is ultra-simple, instantaneous ...and low-cost. Totally eliminated is the need for human operators and telephone call-ins. TV Answer plans to market the technology to television and cable operators.

Potential applications include pay-per-view programming, home shopping services, off-campus learning, market research and opinion polling.

A "flash quiz" could instantly identify a specific video student and his level of comprehension - or the understanding of the entire mass of students. The system seems to work and apparently has universal compatibility and uncomplicated hook-up.

## "TV ANSWER" RF SPECTRUM NEEDS....

The system is presently being tested in the Washington, DC metro area on spectrum "borrowed" from the 216-220 Mhz Maritime-Mobile Service under a special experimental KB2XAF station authorization. The 218.25-MHz frequency used is specifically allocated to AMTS Automated Maritime Telecommunications Systems operating exclusively along the Mississippi River and the Gulf of Mexico. Due to the propagation characteristics of 220 MHz signals, the Washington, D.C. test poses no interference threat to the inland waterways network. It might, however, if the concept expands nationwide.

On December 2, 1987, the Washington, DC communications law firm of Goldberg & Spector filed a very well done Petition for Rulemaking on behalf of TV Answer, Inc. of McLean, Virginia, looking toward establishing a Television Viewer Response Service. An Engineering Statement by the Consulting Radio Engineering firm of A. D. Ring & Associates, P.C. was attached.

Their petition states that 216.25 MHz or 218.25 MHz are not used for inland waterways communications in order to protect TV Channel 13 from interference. They suggest that these frequencies (with a 500 kHz maximum bandwidth) might be appropriate for the new service. Anticipating that broadcast interests are certain to object to the use of those frequencies, however, TV Answer also looked elsewhere for additional spectrum.

Their petition seeks to expand the range of permitted test frequencies to include 220-222 MHz spectrum presently allocated to the Amateur Radio Service - specifically 220.25 MHz presently used for amateur weak signal and experimental communications.

"That band (220-222 MHz), which is presently allocated for amateur use, is the subject of General Docket No. 87-14, which proposes to reallocate the band to land-mobile, because it is essentially unused by amateurs," TV Answer argues. They add, "At 220.25 MHz, operation of the System should not affect either the land-mobile or amateur operations under review in Docket No. 87-14."